

CLAIMS

1. A positive resist composition, comprising:

a resin component (A) that exhibits increased alkali solubility under action of acid,
said component (A) comprising

(i) a structural unit (a1), which contains an acid dissociable, dissolution inhibiting group and is derived from a (meth)acrylate ester,

(ii) a structural unit (a2), which contains an acid dissociable, dissolution inhibiting group that is less readily dissociated than said acid dissociable, dissolution inhibiting group contained in said structural unit (a1), and is derived from a (meth)acrylate ester, and

(iii) a structural unit (a3), which contains a lactone functional group and is derived from a (meth)acrylate ester,

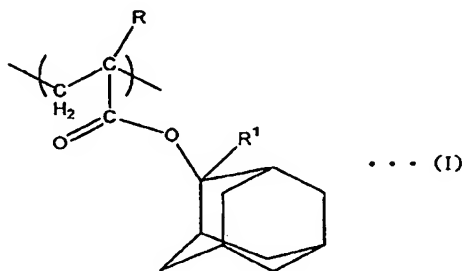
an acid generator component (B) that generates acid on exposure, and

an organic solvent (C).

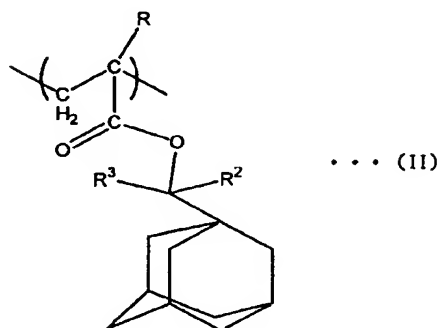
2. A positive resist composition according to claim 1, wherein

said structural unit (a1) is at least one unit selected from a general formula (I) or a general formula (II) shown below, and

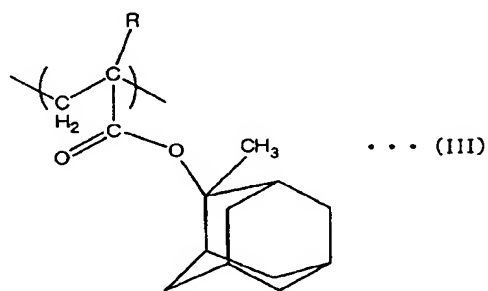
said structural unit (a2) is at least one unit selected from a general formula (III) or a general formula (IV) shown below:



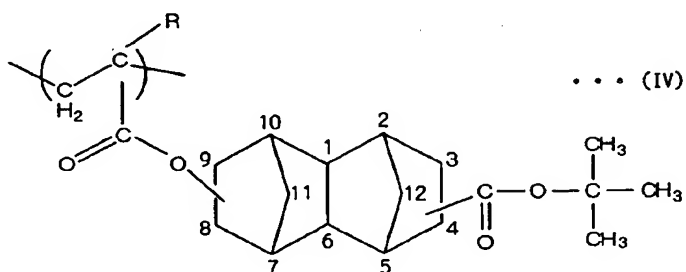
(wherein, R represents a hydrogen atom or a methyl group, and R¹ represents a lower alkyl group of 2 or more carbon atoms),



(wherein, R represents a hydrogen atom or a methyl group, and R² and R³ each represent, independently, a lower alkyl group),



(wherein, R represents a hydrogen atom or a methyl group), and



(wherein, R represents a hydrogen atom or a methyl group).

3. A positive resist composition according to claim 1, wherein a proportion of said structural unit (a1) within a combined total of said structural unit (a1) and said structural unit (a2) is within a range from 40 to 90 mol%.
4. A positive resist composition according to claim 1, wherein a combination of said structural unit (a1) and said structural unit (a2) accounts for 30 to 60 mol% of a combined total of all structural units that constitute said component (A).
5. A positive resist composition according to claim 1, wherein said structural unit (a3) accounts for 20 to 60 mol% of a combined total of all structural units that constitute said component (A).
6. A positive resist composition according to claim 1, wherein said component (A) comprises a copolymer (A1) containing at least said structural unit (a1) and said structural unit (a2).
7. A positive resist composition according to claim 6, wherein said copolymer (A1) also contains said structural unit (a3).
8. A positive resist composition according to claim 6, wherein said copolymer (A1) is mixed with a polymer containing said structural unit (a3).
9. A positive resist composition according to claim 1, wherein said component (A) comprises a mixed resin (A2) containing a polymer that contains at least said structural unit (a1), and a polymer that contains at least said structural unit (a2).

10. A positive resist composition according to claim 9, wherein at least one of said polymer that contains said structural unit (a1), and said polymer that contains said structural unit (a2) is a copolymer that also contains said structural unit (a3).
11. A positive resist composition according to claim 10, wherein both said polymer that contains said structural unit (a1), and said polymer that contains said structural unit (a2) are copolymers that also contain said structural unit (a3).
12. A positive resist composition according to claim 1, wherein said acid generator component (B) is an onium salt with a fluorinated alkylsulfonate ion as an anion.
13. A positive resist composition according to claim 1, further comprising an amine (D).
14. A method of forming a resist pattern, comprising the steps of applying a positive resist composition according to claim 1 to a substrate, conducting a prebake, performing selective exposure, conducting PEB (post exposure baking), and performing alkali developing to form a resist pattern.
15. A method of forming a resist pattern according to claim 14, wherein a heating temperature used during said PEB is equal to or higher than a lower limit of a temperature range across which an acid dissociable, dissolution inhibiting group contained within said structural unit (a1) undergoes dissociation, but is less than a lower limit of a temperature

range across which an acid dissociable, dissolution inhibiting group contained within said structural unit (a2) undergoes dissociation.

16. A method of forming a resist pattern according to claim 15, wherein a heating temperature used during said PEB is within a range from 90 to 125°C.